

Abstract (Basic): RU 2020409 C

Acousto-optical converter splits the monochromatic coherent radiation beam into different frequency components. One of the components is directed on the object and the reflected beam is received. It is subject to heterodyne interaction with another component. The frequency change at the shift of 2π is set and the acousto-optical converter control signal is shaped. The object is under the effect of first order component and the interaction takes place with the zero order component. The number of frequency changes is recorded and used as a measure of distance to object.

The measuring system incorporates the monochromatic beam source (1), acousto-optical modulator (2), collimating optical unit (3), interferometer (4) optical circuit components, reflecting prism (5), tested object (6), photo-receiver (7), phase detector, amplifier (9), pulse shaper (10), counter (11), control and computing unit (12) and the controlled voltage generator (13).

USE/ADVANTAGE - Method is used to measure linear dimensions. Its range is extended due to the application of acoustic converter.

Dwg.1/2

Title Terms: DISTANCE; OBJECT; ACOUSTO; OPTICAL; DETERMINE; METHOD; ACOUSTIC; CONVERTER; CONTROL; FEEDBACK; SIGNAL; FORMING; HETERODYNE; INTERACT; TWO; FREQUENCY; COMPONENT